

WHAT IS CLAIMED IS:

1. A resin-coated hot dip galvanized steel sheet superior in weldability and corrosion resistance comprising:

a hot dip galvanized steel sheet; and

a resin film formed on a surface of said hot dip galvanized steel sheet, said resin film comprising:

a polyolefin copolymer resin molecular-associated by ion cluster;

10 to less than 55 mass % of silica particles in terms of solids content;

1 to 8 mass % of a crosslinking agent in terms of solids content; and

1 to 8 mass % of at least one of tannic acid and ammonium vanadate in terms of solids content.

2. The resin-coated hot dip galvanized steel sheet according to claim 1, wherein said polyolefin copolymer resin molecular-associated by ion cluster is prepared by ionomerizing an olefin-ethylenically unsaturated carboxylic acid copolymer resin which contains 1 to 40 mass % of an ethylenically unsaturated carboxylic acid and by making the resulting ionomer high in molecular weight with use of a crosslinking agent.

3. The resin-coated hot dip galvanized steel sheet according to claim 2, wherein said olefin is at least one

member selected from ethylene and styrene.

4. The resin-coated hot dip galvanized steel sheet according to claim 1, wherein said resin film is formed on the steel sheet surface in an amount of 0.1 to 1.5 g/m<sup>2</sup> in terms of a dry weight.

5. The resin-coated hot dip galvanized steel sheet according to claim 1, wherein said silica particles have an average particle diameter of 1 to 9 nm.

6. The resin-coated hot dip galvanized steel sheet according to claim 1, wherein the surface of said hot dip galvanized steel sheet is subjected to skin pass rolling of 0.01% or more in terms of elongation percentage.

7. The resin-coated hot dip galvanized steel sheet according to claim 1, wherein a center line average roughness Ra at the surface of said hot dip galvanized steel sheet is in the range of 0.1 to 2.0  $\mu\text{m}$ .

8. The resin-coated hot dip galvanized steel sheet according to claim 1, wherein the surface of said hot dip galvanized steel sheet is substantially not subjected to chromate treatment.

9. A method for producing a resin-coated hot dip

galvanized steel sheet superior in weldability and corrosion resistance, said method comprising:

applying an aqueous resin coating material to a surface of a hot dip galvanized steel sheet;

heating said hot dip galvanized steel sheet to dry said aqueous resin coating material; and

allowing a resin film to be formed on the surface of the hot dip galvanized steel sheet,

wherein said aqueous resin coating material comprises emulsion of a polyolefin copolymer resin molecular-associated by ion cluster, 10 to less than 55 mass % of silica particles in terms of solids content, 1 to 8 mass % of a crosslinking agent in terms of solids content, and 1 to 8 mass % of at least one of tannic acid and ammonium vanadate in terms of solids content.

10. The resin-coated hot dip galvanized steel sheet according to claim 9, wherein said polyolefin copolymer resin emulsion molecular-associated by ion cluster is neutralized with an amine.